WHAT IS CLAIMED IS:

1. A fuel cell system comprising a fuel processor for converting a hydrocarbon fuel into a high temperature reformed gas containing hydrogen, carbon dioxide and carbon monoxide, first conduit means for communicating the reformed gas to a shift converter located downstream of the fuel processor for further converting the reformed gas to primarily a hydrogen and carbon dioxide containing gas stream, second conduit means for communicating the gas stream to a fuel cell downstream of the shift converter for reacting the hydrogen in the gas stream, a water source, and water feed means for feeding water to at least one of the first and second conduit means in a controlled manner for cooling at least one of the reformed gas and gas stream, respectively, to a desired temperature.

2. A fuel cell system according to claim 1, wherein the water added to the reformed gas sets the desired oxygen/carbon ratio for the shift converter.

3. A fuel cell system according to claim 2, wherein the water feed means includes control means for controlling the feeding of water to at least one of the first and second conduit means.

4. A fuel cell system according to claim 3, wherein the control means senses the temperature of the reformed gas and gas stream, respectively, and feeds water to at least one of the first and second conduits, respectively, in response to the sensed temperature.

5. A fuel cell system according to claim 1, further including means for collecting water from the fuel cell and recycling at least a portion of the collected water as the water source.

6. A fuel cell system according to claim 2, further including at least one selective oxidizer, between the shift converter and the fuel cell, and located downstream of where the water feed means feeds water to the second conduit means.

7. A fuel cell system according to claim 4, wherein the control means further includes at least one solenoid valve which opens and closes in response to the sensed temperature.

8. A fuel cell system according to claim 3, wherein the water feed means includes means to atomize the water.

9. A fuel cell system according to claim 2, wherein at least one of the first and second conduit means includes a packing of high surface area material and the water is fed to the material.

10. A fuel cell system according to claim 9, wherein said high surface area material is selected from the group consisting of ceramic pellets, steel wool, reticulated ceramic foam, metal foam, and honeycomb monoliths.

11. A fuel cell system according to claim 2, wherein water is fed to both the first conduit and the second conduit.

12. A method for controlling temperature in a fuel cell system comprising a fuel processor for generating a reformed gas, a shift converter downstream of the fuel processor for receiving the reformed gas via a first conduit and further converting same to a primarily hydrogen and carbon dioxide containing gas stream, and a fuel cell downstream of the shift converter for receiving the gas stream via a second conduit, comprising the steps of providing a water source and injecting water from the water source into at least one of the reformed gas and the gas stream respectively, in a controlled manner for cooling the reformed gas and gas stream to a desired temperature prior to feeding the reformed gas to the shift converter and the gas stream to the fuel cell.

13. A method according to claim 12, including collecting water from the fuel cell are recycling at least a portion thereof to the water source.

14. A method according to claim 12, including atomizing the water during injection.

15. A method according to claim 12, including providing a packing of high surface area material in at least one of the first conduit and second conduit and injecting the water on the packing bed.

16. A method according to claim 12, including controlling the water injection to set the desired oxygen/carbon ratio which minimizes excess steam injection into the fuel processor so as to improve efficiency of the power plant.